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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,149	03/23/2004	Tadamoto Tamai	042188	1981

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EXAMINER

KEENAN, JAMES W

ART UNIT	PAPER NUMBER
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3652

MAIL DATE	DELIVERY MODE
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07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/806,149

Applicant(s)

TAMAI, TADAMOTO

Examiner

James Keenan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7, 8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 8, 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Mitchell et al (US 6,350,097, previously cited).

Mitchell shows a vacuum processing system comprising vacuum chamber 1, first load lock mechanism 3 (or 4) comprising a lift table 18 (or 26), a holding mechanism (electrostatic chuck; not shown but described in col. 3, lines 27-57) in the vacuum chamber for moving an object between a process position and a load position, and an internal arm capable of exchanging an object at the load position with another object, wherein the internal arm includes first and second independently swinging arms 22, 29 supported at different positions in a swing axial direction 23, the first arm capable of swinging in a first direction to move an object at the load position to the lift table of the first load lock mechanism, while the second arm is capable of swinging in a second opposite direction to move another object from the lift table of the first load lock mechanism to the load position (col. 5, lines 17-49 and col. 6, lines 13-61).

While applicant may allege that the arms of Mitchell are not capable of simultaneously swinging and moving objects in the manner set forth, because one of the arms would be blocked from entering the load lock while the other arm is already in the load lock, this is not what the claim requires. Rather, the claim merely requires the

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arms to be **capable of** swinging and moving the objects in opposite first and second directions, which the arms of Mitchell clearly do. Note especially col. 6, lines 26-32, where, referring to the lower loadlock, it is disclosed that "the wafer ... can be gripped by upper gripper arm 29" and "the lower arm then moves a treated wafer into the lower loadlock". The claim does not require the arms to simultaneously load and unload respective objects to and from the load lock mechanism while both arms are in the load lock chamber, and even if it did, this passage implies that both arms are in the loadlock chamber at the same time. Even if this is not the case, the arms of Mitchell could be controlled such that a carefully executed combination of vertical and rotational motion would allow the swing arms to simultaneously enter the load lock. Again, it is noted that the arms need only be capable of having such movements; the movements themselves do not need to be explicitly disclosed.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al in view of Dickinson (US 6,852,644, previously cited).

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Re claim 10, Mitchell shows a second load lock with a second lift table, but the loadlocks are vertically displaced along a line parallel to the swing axial direction rather than equidistantly spaced on a plane perpendicular thereto.

Dickinson shows a vacuum processing system comprising vacuum chamber 64, first and second load locks 70, 76 which are equidistant from and disposed in a plane perpendicular to the swing axis of internal arm 82, external arm 90 capable of carrying the process object into at least the first load lock chamber, and first and second robot arms 88, 92 each of which is capable of transferring the process object between a stock site 84 and the external arm, and between the stock site and the corresponding first or second load lock.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Mitchell by disposing the load locks in a plane perpendicular to the swing axial direction and equidistant therefrom, as shown by Dickinson, as both these type of loadlock arrangements are well known in the art, the vertically displaced arrangement generally being used where space savings are important, while the horizontal planar arrangement is generally less complex and therefore less expensive.

Re claim 1, Mitchell shows an external robot (arm) 16 which is capable of moving an object from an external magazine to an orientation device and then to either of the load locks (col. 5, line 50 to col. 6, line 25). However, Mitchell does not show separate first and second robot arms outside the vacuum chamber each capable of transferring

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the object between the magazine, the external robot, and the corresponding first or second load lock.

As noted above, Dickinson shows first and second robot arms. Since both arms are clearly "capable" of reaching the stock site, the external arm, and at least one load lock, they are therefore inherently "capable" of transferring wafers in the manner set forth, even though not explicitly disclosed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Mitchell by utilizing two external robot arms, as shown by Dickinson, to further improve throughput.

Re claims 2 and 7, Dickinson discloses aligner 94 which is also considered a buffer, absent any further structural limitations. Mitchell also discloses an orientation apparatus on the outside of the load lock (col. 5, lines 66-67).

Re claims 3 and 4, Mitchell and Dickinson clearly discloses controls capable of operating the arms in the manner set forth. Again, note that functional recitations in an apparatus claim need not be explicitly disclosed by a reference but must merely be capable of being performed by that reference.

5. Applicant's arguments filed 4/30/07 have been fully considered but they are not persuasive.

Applicant's arguments concerning claim 8 have been addressed above.

6. Applicant's arguments with respect to claims 1-4, 7, and 10 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on 571-272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James Keenan
Primary Examiner
Art Unit 3652

jwk
7/10/07